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AMSAT NEWS SERVICE
ANS-306

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-306 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 306.01
From AMSAT HQ Kensington, MD.
November 2, 2014
To All RADIO AMATEURS
BID: $ANS-306.01

Amateur Radio Satellite Payloads Lost in Antares Launch Explosion

The RACE and GOMX-2 CubeSats were among more than 2 dozen satellites lost after an unmanned Orbital Space Sciences (OSC) Antares 130 vehicle exploded spectacularly shortly after launch at 2222 UTC on Tuesday, October 28, from the Mid-Atlantic Regional Spaceport on Wallops Island on Virginia’s Eastern Shore.
Both satellite packages carried Amateur Radio payloads. The rocket exploded about 6 seconds after launch, sending a huge ball of fire hurtling toward the ground, which set a massive fire at the NASA launch site.

The RACE (Radiometer Atmospheric Cubesat Experiment) CubeSat was a joint project between The Texas Spacecraft Laboratory (TSL) at the University of Texas-Austin and NASA’s Jet Propulsion Laboratory (JPL). Built by a 30-student team, it carried a 183 GHz radiometer, a new science instrument designed by JPL. The spacecraft was equipped to transmit using GMSK at 38.4 k and CW telemetry on a downlink frequency of 437.525 MHz.

TSL’s Glenn Lightsey, KE5DDG, a UT engineering professor, oversaw the student project that worked hand-in-hand with NASA staff in creating a satellite that aimed to measure water vapor in Earth’s atmosphere.

“It’s unfortunate, but it is also part of the aerospace industry,” Lightsey told the Texas Statesman newspaper. “The nature of building space vehicles is that it is not a 100 percent reliable process. Getting into space is really the hardest part.”

The 2U GOMX-2 CubeSat was intended to test a de-orbit system designed by Aalborg University in Denmark. Karl Klaus Laursen, OZ2KK, is listed as the “responsible operator” on International Amateur Radio Union frequency coordination documents. The Amateur Radio payload proposed using a 9.6 k MSK data downlink on 437.250 MHz. Also on board was an optical communications experiment from the National University of Singapore. The mission also aimed to flight qualify a new high-speed UHF transceiver and SDR receiver built by an Aalborg University team.

The Antares 130 launcher was on a resupply mission, carrying some 5000 pounds of cargo to the International Space Station.RACE, GOMX-2 and the other satellites onboard the rocket were to be launched into orbit from the International Space Station.

The Antares 130 also was carrying the Flock-1d array of 26 satellites as well as Arkyd-3 and Cygnus CRS-3.

[ANS thanks ARRL for the above information]

Design The Next AMSAT Satellite!

At the 2014 AMSAT Space Symposium AMSAT Vice President – Engineering Jerry Buxton announced the plan for the next generation of AMSAT satellites. “The door is open for everyone, to submit their ideas. AMSAT Engineering has a long term strategy and this is the first step.”

The Engineering long term strategy includes the following goals

Advancement of amateur radio satellite technical and communications skills
Enhance international goodwill
Grow and sustain a skilled pool of amateur radio satellite engineers
Establish and maintain partnerships with educational institutions
Develop a means to use hardware common to all opportunities

With respect to the last goal Jerry said “Within the bounds of the type of satellite it takes to achieve any of the various orbit opportunities, let’s consider in those plans the possibility of developing a platform that can suit
any and all orbits. Perhaps a modular CubeSat, using a common bus as we did in
Fox-1, which gives great flexibility in building and flying different sizes and
configurations of CubeSats with simple common-design hardware changes.”

Submissions should be thorough and contain the following information. The purpose of the proposal is not just in suggesting an idea; being an all-volunteer team AMSAT needs your help in carrying out the idea.

Design
Implementation – CubeSat platform
Estimated timeline
Cost – volunteer resources, commercial (COTS) units
Launch – how does it get to orbit
Strategy – how it fits into AMSAT’s Engineering long term strategy

As mentioned above the idea should be based on the CubeSat platform. This is the
standard through which we will look for launches in the foreseeable future.

In considering your proposal, Jerry encourages you to contact him for more details on the criteria. A guidebook to the criteria is now available for download here. In particular, if you plan to include a university as a partner
to provide experiments or other support and you are not representing that university, please contact Jerry for assistance in working with our existing partners or establishing a new partnership.

“Being amateur radio operators, it is easy for us to fall into a particular trap
because of our history of communicating with other amateurs throughout the world” says Jerry. “Specifically, most people who are not already involved in
the world of satellite technology are unaware of or simply overlook the provisions of the current ITAR and soon to be EAR export rules particularly with
regard to deemed exports which requires governmental permission to discuss satellite projects with foreign nationals.”

While all amateurs are invited to submit ideas, U.S. amateurs must take particular care of they choose to become involved in a collaboration which includes individuals from other countries. It is permissible to receive ideas
and proposals from outside the U.S., but it is not permitted for U.S. Persons to
export or share design ideas with other countries unless they have taken the proper steps to insure compliance with ITAR and deemed export rules.

Additionally, those wishing to work on proposals should use care in presenting
themselves in their contacts. While the goal is for AMSAT to build and launch
the satellite, it is not an AMSAT project until it is accepted by the AMSAT Board of Directors. It is acceptable to represent yourself as members of a project team that plans to submit a proposal to AMSAT for a future satellite project, as the AMSAT name is well known.

“It is not our intention that ideas be submitted to AMSAT-NA which would be more

appropriately handled by an AMSAT organization in a country where AMSAT is established. AMSAT-NA is seeking ideas from amateurs in North America and will certainly consider ideas from amateurs in countries which do not have an established AMSAT organization or relationships with an existing AMSAT organization."

The deadline for submissions is May 30, 2015. After the submission date the ideas will be screened for completeness and then reviewed by a board consisting of the AMSAT Engineering Team, AMSAT Senior Officer and Board of Directors representatives, and aerospace industry members. The review board may modify or consolidate ideas and will consider which meet the criteria to become a project based on feasibility, cost, and the ability to bring value to the amateur satellite community. The review process is expected to be completed in September 2015.

For those ideas selected to become a project which satisfy the requirements for an ELaNa launch, the idea authors will be asked to work with the AMSAT Engineering Team on an ELaNa proposal.

The Engineering Team will then work on the details of execution for the selected project(s) and present a proposal to the AMSAT Board of Directors in October 2015 for final approval to begin work. Once approved, any ELaNa proposals will be submitted in November 2015 and the project(s) will move forward.

Now is the time for YOU to begin working on the next AMSAT satellite!

[ANS thanks Jerry, N0JY, for the above information

ARISS U.S. Partners Now Accepting Proposals for Contacts in 2015

The ARISS U.S. partners have opened a window seeking formal and informal education institutions and organizations in the U.S., individually or working together, to host an Amateur Radio contact with a crew member on board the ISS during 2015. The proposal window is October 17 – December 15, 2014. Read the announcement at: http://www.arrl.org/files/file/ARISS/ARISS%20Proposal%20Window%20Announcement-Oct-2014.pdf

To maximize these radio contact opportunities, ARISS is looking for organizations that will draw large numbers of participants and integrate the contact into a well-developed education plan.

More details on expectations, audience, proposal guidelines and proposal form, and dates and times of Information Sessions are available at www.arrl.org/hosting-an-ariss-contact. Please direct any questions about hosting a contact in the U.S.to ariss(a)arrl.org.

[ANS thanks ARISS for the above information]

Recent ARISS Contacts

A direct contact via 8N4STAR with students at Bisei Elementary School, Ibara, Japan was successful Mon 2014-10-27 08:52:46 UTC 41 deg. Astronaut Alexander Gerst, KF5ONO answered 6 questions for students.

Bisei Elementary School with 162 students was established at 1970 in the small town of Bisei. It is the home of the Bisei Astronomical Observatory.

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A telebridge contact with members of The Explorers Club, New York City, New York, USA via IK1SLD was successful Sat 2014-10-25 16:36:09 UTC 56 deg.

Astronaut Alexander Gerst, KF5ONO responded to nine questions, which included questions from Apollo astronauts Charles Duke, Apollo 16 moon walker, and Walt Cunningham, Apollo 7 Lunar Module pilot. Two ticket holders for Virgin Galactic SpaceShip 2 also were among those who asked questions.

The Explorers Club is an international multidisciplinary professional society dedicated to the advancement of field research and the ideal that it is vital to preserve the instinct to explore. Founded in New York City in 1904, The Explorers Club promotes the scientific exploration of land, sea, air, and space by supporting research and education in the physical, natural and biological sciences. The Club’s members have been responsible for an illustrious series of famous firsts: First to the North Pole, first to the South Pole, first to the summit of Mount Everest, first to the deepest point in the ocean, first to the surface of the moon—all accomplished by Club members.

[ANS thanks Charlie, AJ9N, for the above information]

Beta Testers Sought for New Heavens-Above Android app

A few features of the app:
- Spacecraft visibility predictions based on current GPS location
- Visibility calculations are done on the device, so you only need to go online once every few days to update the list of orbital elements
- Works on phones and tablets
- Live Sky Chart, which shows all currently visible satellites
- Prediction of Iridium flares

There will be two versions of the app, one will be free of charge and will include advertisements, the other will be a paid for version without ads. The price is still to be determined.

To participate, just send me an email to chris.peat(a)heavens-above.com
from your
google mail account (or let Chris know the name of your Google account)
and you
will be added to the Heavens-Above testers community. You will then
receive an
invitation with further instructions on how to download and install the test
version of the app. The first official release will be available to all for
download from the Google play web site.

A forum is also available on the Heavens-Above site;
http://www.heavens-above.com/forum/default.aspx?g=forum&c=5

[ANS thanks Chris Peat for the above information]

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In addition to regular membership, AMSAT offers membership in the
President's Club. Members of the President's Club, as sustaining
donors to AMSAT Project Funds, will be eligible to receive addi-
tional benefits. Application forms are available from the AMSAT
Office.

Primary and secondary school students are eligible for membership
at one-half the standard yearly rate. Post-secondary school students
enrolled in at least half time status shall be eligible for the stu-
dent rate for a maximum of 6 post-secondary years in this status.
Contact Martha at the AMSAT Office for additional student membership
information.

73,
This week's ANS Editor,
Lee McLamb, KU4OS
ku4os at amsat dot org